



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,283	06/21/2006	Yasunori Hatamura	278215US6YAPCT	2461
22850	7590	04/29/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
ZERVIGON, RUDY				
ART UNIT		PAPER NUMBER		
1792				
NOTIFICATION DATE		DELIVERY MODE		
04/29/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/549,283

Applicant(s)

HATAMURA ET AL.

Examiner

Rudy Zervigon

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-10 in the reply filed on March 10, 2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-5, and 7-10 are rejected under 35 U.S.C. 102(a,e) as being anticipated by Schneider; Gerhard M. et al. (US 6364957 B1). Schneider teaches a focus ring assembly (130; Figure 3,6-9, and 11; column 8; lines 45-67) comprising: a focus ring (210; Figure 3,6-9, and 11; column 8; lines 45-67); and a secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) coupled to said focus ring (210; Figure 3,6-9, and 11; column 8; lines 45-67), wherein said focus ring (210; Figure 3,6-9, and 11; column 8; lines 45-67) is configured to couple to a substrate holder (40; column 4; line 17-38) configured to support a substrate (15; Figure 3) exposed to a process in a processing system (Figure 3), and said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) is configured to reduce

deposition of material (column 9, lines 5-19) from said process on a backside surface of said substrate (column 8; line 37), as claimed by claim 1

Schneider further teaches:

- i. The substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) comprises a compliant material (column 9, lines 5-19), as claimed by claim 2
- ii. The substrate holder (40; column 4; line 17-38) as recited in claim 2, wherein said compliant material (column 9, lines 5-19) comprises at least one of silicone rubber, polyimide, and Teflon, as claimed by claim 3
- iii. The substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) comprises a rigid material (column 9, lines 5-19), as claimed by claim 4
- iv. The substrate holder (40; column 4; line 17-38) as recited in claim 4, wherein said rigid material (column 9, lines 5-19) comprises at least one of a ceramic material (column 9, lines 5-19), silicon, silicon carbide, silicon nitride, silicon dioxide, carbon, sapphire, and alumina, as claimed by claim 5
- v. The substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein a clearance space is formed between said substrate (15; Figure 3) and said focus ring (210; Figure 3,6-9, and 11; column 8; lines 45-67), and said clearance space exposes at least a portion of said backside surface on said substrate (15; Figure 3) and said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) reduces said clearance space - Figure 6, as claimed by claim 7. However, Applicant's claim

requirements are believed to be claim requirements of intended use in the pending apparatus claims. Applicant's claim requirements hinge on the dimension(s) of the substrate *used*. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

- vi. The substrate holder (40; column 4; line 17-38) as recited in claim 7, wherein said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) reduces exposure of said backside surface (column 8; line 37), as claimed by claim 8
- vii. The substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein a portion (wafer 15 sized to midpoint of 210/200 spacing; Figure 6) of said backside surface on said substrate (15; Figure 3) is exposed and wherein said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) reduces said exposure of said backside surface (column 8; line 37), as claimed by claim 9
- viii. The substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein said secondary focus ring (200 - "clamping ring"; Figure 3,6-9, and 11; column 8; lines 45-67) makes contact with said substrate (15; Figure 3) and makes contact with said focus ring (210; Figure 3,6-9, and 11; column 8; lines 45-67), as claimed by claim 10. All claimed

“contact” is required as shown by Figure 6, otherwise, the cited components would not be fixed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider; Gerhard M. et al. (US 6364957 B1) in view of Wicker; Thomas E. et al. (US 6464843 B1). Schneider is discussed above. Schneider does not teach that the substrate holder (40; column 4; line 17-38) as recited in claim 1, wherein said secondary focus ring (200 - “clamping ring”; Figure 3,6-9, and 11; column 8; lines 45-67) comprises silicon having a resistivity less than or equal to $1\ \Omega\text{-cm}$.

Wicker teaches a plasma processing system (Figure 1) employing focus rings with resistivities of below $200\ \Omega\text{-cm}$ (column 6; lines 50-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Schneider to use materials with resistivities of below $200\ \Omega\text{-cm}$ as taught by Wicker.

Motivation for Schneider to use materials with resistivities of below $200\ \Omega\text{-cm}$ as taught by Wicker is for reducing particle contamination in the processed wafer as taught by Wicker (column 6, lines 1-15).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272-1442. The examiner can normally be reached on a Monday through Friday schedule from 9am through 5pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Parviz Hassanzadeh, at (571) 272- 1435

/Rudy Zervigon/

Primary Examiner, Art Unit 1792